Executive Summary

INTRODUCTION

BACKGROUND

The Downtown Transportation Master Plan study is a key piece in the ongoing revitalization of Hamilton's central urban area. The study was undertaken as part of a set of initiatives, referred to as **Putting People First: Downtown Land Use and Transportation.** "Putting People First" is an integrated land use and transportation planning exercise that looks at the downtown as an overall system as opposed to a number of separate components.

Putting People First was initiated to address a number of concerns in the downtown including:

- Changing economy
- Lack of pedestrian and cycling amenities
- Unattractive environment

Transportation is seen as a key component in helping to revitalize downtown Hamilton.

The other key piece in the revitalization effort is the New Land Use Plan for Downtown Hamilton. This is the first formal plan for the downtown core and will form part of the Official Plan for the new City of Hamilton. The intent of the Plan is to foster a dynamic mix of urban residential, commercial and institutional activities across the downtown.

STUDY PURPOSE AND OBJECTIVES

The purpose of the Downtown Transportation Master Plan is to guide transportation growth and planning in downtown Hamilton over the next twenty years. This Master Plan will serve as both a blueprint for transportation strategies and the basis upon which capital improvements are made over this period. The Master Plan is a companion piece to the City's Official Plan, which guides overall development and growth in Hamilton over a twenty-year time horizon.

In December 1998, Regional Council adopted the recommendations of the Regional Transportation Review regarding a downtown core area strategy. The three elements of this strategy set the stage for the goals of this current study. Specifically it stated:

"That a downtown core area strategy be adopted that incorporates:

> i) Diverting through and truck traffic to alternative by-pass routes around the core area.
>
> ii) Greater priority for pedestrians, public transit and bicycles on downtown roadway rights-of-way,
>
> iii) Parking policies that favour short-term business-oriented parking over all-day commuter-oriented parking"

Based on these goals, a set of guiding principles for transportation planning in the downtown was developed (see following page). Subsequently, they were approved by Council and formed part of the Terms of Reference for this study. These guiding principles have served as the study objectives for the Downtown Transportation Master Plan.

SUMMARY OF DOWNTOWN PROBLEMS AND OPPORTUNITIES

Downtown Hamilton has an extensive, well-connected street system with a number of wide one-way streets. The combination of wide streets and one-way traffic flow produces a situation in which the streets operate at a high level of service at most times of the day.

In the downtown area, there is an abundance of long-term (commuter) parking, most of it located in surface parking lots on the periphery of the downtown core. Parking rates generally favour long-term (commuter) parking over short-term (shopping /

104-00303/

business) parking, particularly in the privately operated surface parking lots.

Study Guiding Principles

i) Support a diverse mix of land uses and built form, and ensure that development can be supported by the transportation system and by appropriate land use and parking controls.

ii) Strengthen links between the core and the harbour.

iii) Provide short-term business-oriented parking spaces and discourage long-term parking , and provide public parking in strategically located structures or lots.

iv) Reduce the number of off-street parking lots and replace them with buildings, parkettes, and/or landscaping features.

v) Maintain and improve local access and circulation for all modes of transportation in the core area by diverting through vehicular and truck traffic around the core area, and by implementing traffic calming measures, where appropriate.

vi) Ensure adequate truck access to local businesses by providing curb loading spaces.

vii) Ensure a reasonable level of service for vehicular traffic during the peak hours.

viii) Discourage through traffic on local streets and in residential neighbourhoods.

ix) Give priority to pedestrian safety and mobility over motor vehicle movement, especially at crosswalks, and create a high quality, attractive pedestrian environment that is not only safe, but perceived as safe.

x) Discourage sidewalk riding by cyclists by providing continuous and suitable bicycle facilities, and ensure that existing and future developments provide adequate bicycle parking.

xi) Provide a downtown transit terminal that will provide enhanced passenger amenities, and convenient and timely connections between routes.

xii) Maintain a suitable and convenient level of transit service on all downtown routes and to/from the GO station, and improve the attractiveness of transit services in the downtown through new initiatives."

A street system that favours automobile traffic, coupled with inexpensive parking, can have adverse effects on travel by other modes (transit, cycling, walking) and on the attractiveness of downtown as a destination. On many downtown streets, one-way traffic flow and excess lane capacity encourages high vehicle speeds, creating an unpleasant and potentially unsafe environment for pedestrians, cyclists and transit riders at bus stops.

In addition, the large amount of surface parking on the edge of the downtown creates a break in the street facade between central retail and office uses and nearby residential areas. These factors in combination make walking, cycling and taking public transit unattractive options for travel in downtown Hamilton.

Identifying these problems and opportunities is the first step in developing options for improving Hamilton's comprehensive downtown transportation system. Opportunities could be translated into strategies and solutions that would enhance the liveability of the downtown. For instance, excess lane capacity on some downtown one-way streets could be re-allocated into additional space for pedestrians (wider sidewalks), cyclists (bicycle lanes), transit (bus lanes), loading for delivery vehicles and short-term metered parking spaces.

This Master Plan report presents a detailed overview and evaluation of the major problems and opportunities with the downtown transportation system.

PLANNING PROCESS AND APPROVALS

CLASS ENVIRONMENTAL ASSESSMENT (CLASS EA) AND MASTER PLANNING APPROACH

This study followed the provincially approved planning process for Master Plans as outlined in the document entitled "**Municipal Class Environmental Assessment**" (June 2000). Master plans fall under the **Class EA process**, which is a planning process for a group of undertakings as opposed to an individual undertaking.

Master plans are long range plans which integrate infrastructure requirements for existing and future land use with environmental

assessment planning principles. Master plans provide a broad framework through which the need and justification for specific projects can be established and the environmental process can be satisfied. By defining the long range transportation needs of the downtown in relation to land use planning as guided by the Official Plan and "The New Land Use Plan for Downtown Hamilton", this Master Plan will reduce the need for works required to deal with the impacts of change due to growth. A comprehensive master plan approach also promotes consistency between transportation planning and environmental assessment requirements.

As a master plan study, the Downtown Transportation Master Plan is considered a **Schedule 'B' Class EA** and as such satisfies Phases 1 and 2 of the Class EA process (See Section 1.7).

A Schedule 'B' Class EA encompasses projects that generally include improvements and minor expansions to existing facilities where there is the potential for some adverse environmental impacts; therefore, there is a requirement to proceed through a screening process to determine a preferred solution to a problem or problems, including consultation with those who may be affected.

PLANNING PRINCIPLES

This Master Plan is intended to guide the orderly, long-term development of the downtown transportation network in an effective and economical manner. The Plan will provide direction for the planning and implementation of road, transit, pedestrian, bicycle and parking facilities. The Plan will guide the construction of infrastructure and development of policies to address the objectives of the New Land Use Plan for Downtown Hamilton while at the same time considering the need to address existing and future travel demands within the downtown.

This Master Plan follows a planning process that incorporated the following Environmental Assessment principles:

Consultation with affected parties early in the planning process so that decision making is cooperative: Significant consultation regarding future transportation directions for downtown Hamilton began as part of the Smart Moves Study in 1997 (Phase 1 of the Downtown Transportation Master Plan) during which two major workshops were held plus the Longo Workshop and the Architects Charette. Two workshops were also held as part of the undertaking for developing "The New Land Use Plan for Downtown Hamilton" in May 1999 and February 2000. Phase 2 of the Downtown Transportation Master Plan commenced in the fall of 1999 with the first public open house to receive ideas on transportation alternatives occurring in December 1999. Two additional open houses were held in June 2000 and May 2001 at key points in the study. In addition to the formal public open houses, the study team consulted extensively with other City agencies (fire, police, ambulance, HSR (transit), parking services, traffic engineering and operations, and planning and development), key stakeholders (BIAs, Chamber of Commerce, Downtown Planning Advisory Committee, Downtown Partnership, St. Joseph's Hospital) and the general public through individual meetings, telephone calls and the internet. As part of the study, a survey of 392 businesses was conducted in March 2000 to receive input on possible impacts of transportation options being considered as a part of the Master Plan.

Consideration of a reasonable range of alternatives: The street network options developed for the downtown considered different degrees of one-way to two-way conversion ranging from the maintenance of the existing one-way system, but making improvements by reallocating pavement currently used by motor vehicles to other modes, to converting all major arterials in the downtown to two-way operations. The "Do Nothing" option provided a benchmark for the evaluation of alternatives. The evaluation of other transportation system components: pedestrian, bicycle, transit and parking also considered a range of options based on the defined set of guiding principles, but in a less formal way than the street network option development.

Identification and consideration of the effects of each alternative on all aspects of the environment: The study included an inventory of the natural, cultural and socio-economic environments. All of the alternatives examined were essentially developed with the intent to make a positive contribution to the natural, cultural and socio-economic environments, support

objectives of the New Land Use Plan for Downtown Hamilton and provide a more balanced transportation system for all users.

Systematic evaluation of advantages and disadvantages of identified alternatives to determine their net environmental effects: The study adopted a two-phased approach for identifying and evaluating alternatives. The first phase consisted of developing alternative solutions for the vehicular, pedestrian, bicycle, transit and parking elements of the downtown study area. These alternatives were screened using a defined set of evaluation criteria and guiding principles developed specifically for this study as a means for evaluation. The second phase included a more detailed set of alternatives (street network options) carried forward for extensive technical analyses.

Provision of clear and complete documentation of the planning process followed, to allow "traceability" of decision making with respect to the project: The study was directed by terms of reference that were approved by Council in the fall of 1999. The terms of reference included a set of guiding principles to direct the development of the Downtown Transportation Plan. These guiding principles, used as study objectives , have been incorporated into all aspects of the study. As part of the study, several background documents were prepared on different aspects of the study including development of alternatives, technical assessment, evaluation criteria and process, and public consultation. These background documents, included as appendices to this Project File Report, were used extensively in the preparation of the Master Plan. The background documents were also circulated to and reviewed by study team members (internal and external) at appropriate times during the study.

PART II ORDER

If issues pertaining to the study remain unresolved through the planning process, there is an opportunity under the Class EA for the Minister of Environment of Ontario to review the status of a project. Members of the public, interest groups and review agencies may request the Minister to require a proponent (in this case, the City of Hamilton) to comply with Part II of the EA Act (which addresses individual EAs), before proceeding with a proposed undertaking. This is known as a "Part II Order".

Following the submission of the Project File report with the municipal clerk, there will be a minimum period of thirty (30) days to ensure the public has an opportunity to review the proposals and provide any further comments they deem appropriate in order to have any concerns addressed. If concerns can be resolved within the review period, the City will have approval to proceed with the recommended undertakings. If, at the end of this period, any issues remain unresolved, a request by the opponent may be made to the Minister of the Environment to require the City to comply with Part II of the Environmental Assessment Act before proceeding with the project. The minister would then determine whether or not an individual EA is necessary.

RECOMMENDED TRANSPORTATION PLAN

COMPONENTS OF THE PLAN

Results of a detailed traffic analysis indicated that the existing street network operates at a high level service for motor vehicles with excess lane capacity along many street sections. This led to the identification of opportunities for changing the street network and identifying strategies that favour (or at least put more emphasis on) pedestrians, cycling, transit and short-term parking.

As discussed previously, an evaluation of alternative solutions using a defined set of guiding principles and evaluation criteria was undertaken to determine the preferred changes as they relate to the movement of vehicles, pedestrians, cyclists, transit users, and parking policies.

These changes form the basis of the Downtown Transportation Master Plan. Exhibit ES.1 provides a map of the recommended street network changes. Key elements of the plan include:

- conversion of some primary and secondary streets from one-way operation to two-way operation;

- identification of street sections with excess lane capacity that can be used for improvements to the pedestrian environment;
- modifications to streets that will encourage commuter and recreational cycling;
- opportunities for improvements to the Gore Park area and transit system by consolidating bus terminal operations at an expanded MacNab terminal area;
- parking policies designed to influence mode choice (auto vs. bicycle, transit, and walking) and encourage short-term high turnover parking for business / retail trips and discourage all-day commuter parking.

ADVANTAGES AND DISADVANTAGES OF TWO-WAY STREETS

A major component of the Recommended Plan is the conversion of several primary and secondary streets in the downtown from one-way to two-way operations. The debate over the appropriateness of two-way streets was central to this study. The advantages and disadvantages of two-way streets as they pertain to downtown Hamilton can be summarized as follows:

Traffic Flow - The overall effect of the project will be slower moving motor vehicle traffic but with more direct, less circuitous routing and improved way-finding for drivers, and shorter trips. More direct access will be provided to all businesses on new two-way streets.

Parking manoeuvres, left turns onto side streets and less optimum traffic signal timing progressions will create more stoppages in traffic than at present. As a result, traffic will generally move slower resulting in more congestion. Average trip times for through trips in the downtown are estimated to increase by about 1.3 minutes while average times for all trips are estimated to increase by around 10 seconds. Approximately 5% of through-trips are expected to divert out of the core area as a result of slower travel times. Traffic speeds and volumes will be more compatible with a pedestrian-oriented downtown environment.

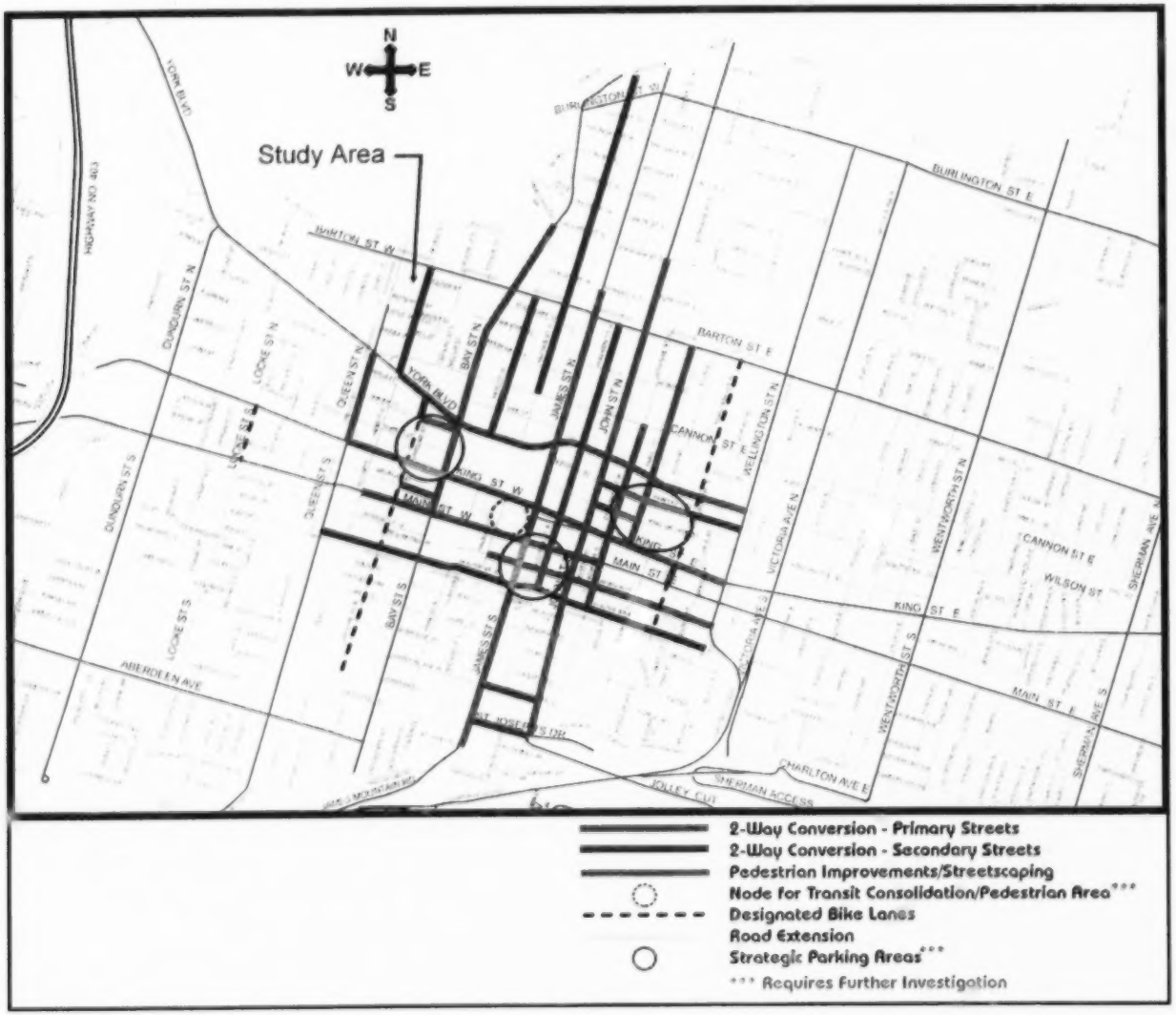
Some of the existing and newly available turning movements will be tight and difficult for trucks and buses. Traffic operation at some intersections may be impeded without physical changes to their configuration (to be determined following implementation and monitoring).

Road and Sidewalk Changes - In many places, wider sidewalks will be possible, providing improved pedestrian conditions and buffering from vehicular traffic. In some cases the streets will have narrower lanes than at present, often reduced to the minimum acceptable width of 3.0m. There are many existing street sections in the City with 3.0m lanes, but not typically on major two-way streets. In some locations sidewalks will need to be modified to facilitate vehicles turning. Opportunities will be provided for bike lanes, and a more continuous network of bike routes will be available using primary and secondary roads.

Air Pollution - Traffic simulation modelling indicates that the percent change in vehicle emissions (NOx) may increase marginally, less than 5%, due to the congestion resulting from the conversion to two-way streets. Overall emissions due to slower traffic are partially offset by reductions in the number of vehicle-trips through the downtown.

Safety - The effect on traffic safety is difficult to predict and evidence from other jurisdictions is inconclusive, but slower traffic may mean fewer and less severe collisions; however, the added turning movements and congestion could result in an overall increase in vehicle-pedestrian and vehicle-vehicle collisions. Slower traffic should improve the perception of pedestrian safety on these streets and support the goals of the New Land Use Plan for Downtown Hamilton.

EXHIBIT ES.1 RECOMMENDED LONG TERM TRANSPORTATION NETWORK CHANGES



Loading and Parking - In order to implement two-way conversion some changes to parking/loading are necessary to maintain at least one lane of continuous flow in each direction on each street and facilitate the movement of trucks and buses. As a result, there will be changes to available on-street parking on several streets (a loss of parking in some areas will be offset by gains in other areas). The removal of on-street parking spaces may impact adjacent businesses. The conversion of King Street to two-way will impact off-street parking in a City owned lot west of Wellington Street, in order to open Jarvis Street through to King Street to facilitate HSR buses and increase traffic circulation opportunities.

Emergency Services - As noted with two-way streets, there will be increased congestion; this will effect emergency vehicle (ambulance and fire) response times; however, this will be offset at least partially by more direct routing. The mandated policy of "4 minute response - 80% of the time" fire response will not be exceeded in any downtown areas.

There will be more direct routing for emergency vehicles accessing St. Joseph's Hospital although overall response time may increase slightly.

Two-way streets will also give emergency vehicles more route choices for getting through intersections than on one-way streets where vehicles typically fill up all available lanes, which will help to reduce response times.

Transit - Due to the slowing of traffic, there would be increased HSR operating costs with a two-way street system (estimated at $1.5M annually; more buses will be required to maintain existing service levels on two-way streets). With two-way streets, there is the potential to provide more direct routing for return trips on two-way streets and to improve routes to better serve new residential and retail/commercial areas resulting in increased ridership, although customer access and travel speeds in some areas may be compromised with a slower transit system.

KEY ISSUES AND MITIGATION MEASURES

The effects of the implementation of the Recommended Transportation Plan on the downtown environment are anticipated to be, on the whole, positive as the plan attempts to bring about a more equitable balance between providing good facilities for motor vehicles and other measures that promote walking, cycling and the use of transit.

Throughout the study, a number of concerns were raised on the impacts of the Recommended Transportation Plan. These are summarized in Exhibit ES.2 along with the recommended mitigation measures and further commitments.

IMPLEMENTATION STRATEGY

The timing of the Recommended Transportation Plan is shown in Exhibit ES.3. The timing of projects has been determined in such a way that:

- the effects of the changes can be monitored to measure their overall effectiveness
- the public can adjust to the changes over time
- they can be implemented in a cost effective way

The implementation strategy reflects the need to implement changes that provide reasonable alternatives to automobile travel (e.g. pedestrian, cycling and transit improvements) before implementing the major one-way to two-way street conversions (e.g. King Street and York Boulevard/Wilson Street).

It is important to note that each project (two-way conversion, bicycle lanes, etc.) is subject to available funding and approval and will still need to be co-ordinated with other ongoing works (subsurface, streetscaping, road resurfacing/reconstruction, major building construction, etc.).

EXHIBIT ES.2: SUMMARY OF ISSUES AND MITIGATION MEASURES

ISSUE	MITIGATION MEASURES
Excessive traffic delay with two-way streets was noted as a concern by many members of the public and stakeholders.	The implementation of two-way streets will be staged over a number of years so that the impacts of conversion on traffic can be monitored and, if necessary, the plans can be adjusted. The effect of changes will force motor vehicle drivers to consider changes to how they currently make trips. That is, they may choose a different mode (e.g. walking or cycling), a different time (e.g. start to work earlier or later), or a different location (e.g. move closer to work). This may reduce the impact of two-way streets on congestion levels in the peak periods. Traffic signal timings will be optimized for the two-way configurations to facilitate the efficient flow of traffic. Parking by-law enforcement will be increased to ensure that road rights-of-way are clear of illegally parked and/or stopped vehicles.
An increase in vehicle related emissions could occur as a result of increased traffic congestion.	Implementation of trip reduction programs and improvements to the pedestrian, bicycle and transit systems will help reduce auto demand and therefore emissions. Shorter trips resulting from less out-of-the-way travel on two-way streets will contribute to reducing air emissions. Improvements in vehicle technologies and other programs such as Ontario's Drive Clean program are helping to reduced vehicle emissions.
Impact of two-way streets on pedestrian safety is a key concern, especially at intersections.	Evidence on the impacts of two-way streets on pedestrian safety is inconclusive. The City undertakes a yearly comprehensive collision assessment program for all major road facilities. The change in collision frequency will be monitored following conversion to two-way operations to determine if other changes are required. The City will work with special groups requiring assistance and/or training in adjusting to two-way streets (e.g. individuals who are visually impaired).

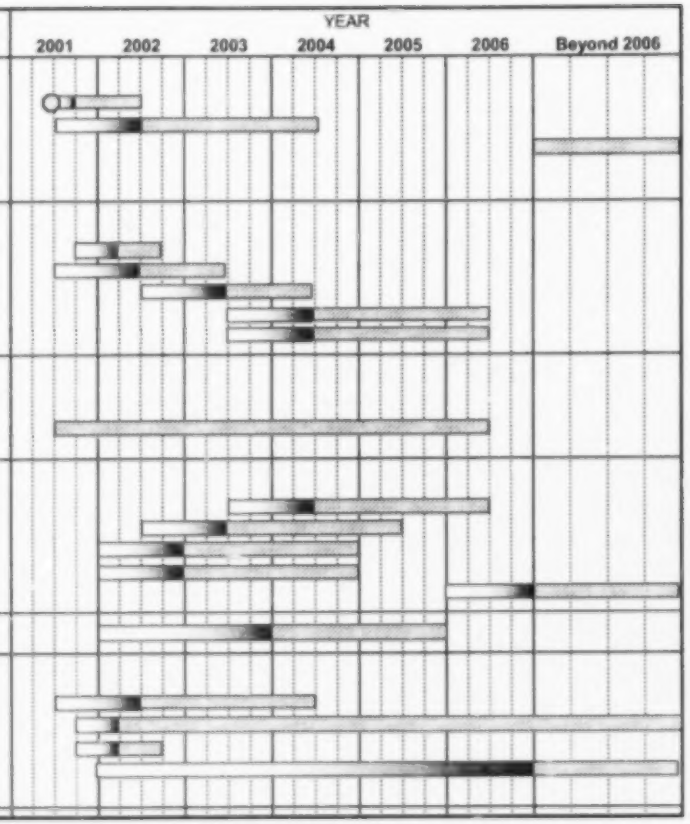
EXHIBIT ES.2: SUMMARY OF ISSUES AND MITIGATION MEASURES (CONT'D)

ISSUE	MITIGATION MEASURES
Slower traffic speeds may delay HSR vehicles.	With the staged implementation of two-way streets and other improvements such as sidewalk widening, and introduction of bicycle lanes, the HSR will have the opportunity to plan for changes in bus routings to take advantage of new, more direct routing opportunities on two-way streets and consider transit priority measures (e.g. signal pre-emption) at the detailed design stage. Additional buses will be required to maintain existing service levels. Maintaining one-way operations on Main Street and Cannon Street provides an opportunity to consider bus priority lanes in the future if demand warrants.
Impacts of slower traffic speeds on emergency response times.	The staged implementation of changes to the street network will enable impacts on emergency response times to be monitored with appropriate changes to routing being made. Solutions to problems identified in the future could also include improvements such as signal pre-emption and/or physical changes to the street network to ensure timely response of emergency vehicles.
Loss of ability to use one of two through lanes for on-street loading (James Street North).	Consider changes to available f on-street parking and loading to ensure adequate space for the loading and unloading of delivery vehicles. Increase enforcement of commercial loading zones.
Conversion to two-way operations will result in narrower lane widths in some locations and new difficulties for large vehicles (e.g. buses) turning corners.	Lane widths will not be reduced below the minimum acceptable width of 3.0m. Design plans will be prepared ensuring that buses and single unit trucks can negotiate corners with relative ease.
Removal or re-designation of some on-street parking spaces (approximately 60 spaces impacted) with two-way conversion.	Provide more short-term parking in municipally owned lots. Pursue development of additional municipally owned lots in key areas. Look for additional on-street parking opportunities in detail design stage.

EXHIBIT ES.2: SUMMARY OF ISSUES AND MITIGATION MEASURES (CONT'D)

ISSUE	MITIGATION MEASURES
Expanded MacNab Street transit terminal may have negative impacts on adjacent residences.	Development of an expanded terminal would require further investigation of impacts and public consultation as a Schedule 'C' Class EA. The City will actively involve affected parties in the planning process. The transit terminal would be designed to minimize impacts. Features may include a roof or cover to screen the view of buses and filter exhaust fumes, a pedestrian walkway, and possibly on-street or overhead retail development to help create a 'quality' development.
Truck traffic contributes to safety, noise and health impacts.	The City will investigate opportunities to improve signage for designated truck routes and provide better enforcement of truck restrictions. The City will undertake a need and feasibility review of the Hamilton Perimeter Road as part of its Growth Related Integrated Development Strategy.
Impacts of two-way streets on accessibility for all users of St. Joseph's Hospital.	Work with St. Joseph's hospital to ensure that recommended street network changes do not compromise/conflict with future hospital expansion activities. Design street network changes such that a high level of accessibility is maintained to the hospital. In some cases, there are opportunities to improve accessibility with two-way streets.
Improve circulation in York/Cannon/Bay area	Review options to extend conversion of York Boulevard to Hess Street at time of implementation.

Projects	Order of Magnitude Costs
Primary Road Network Changes	
James/John Two-way Conversion (Phase 1)*	$400,000
James/John Two-way Conversion (Phase 2)	$0.5M - $1M
King/York/Wilson Two-way Conversion with Jarvis Street extension	$0.5M - $1M
* co-ordinate with Lister Block development proposal	
Secondary Street Network Changes	$250,000 - $500,000
Caroline Two-way Conversion	
Park/McNab Two-way Conversion	
Hughson/Hess Two-way Conversion	
King William/Rebecca Two-way Conversion	
Hunter Street Two-way Conversion	
Pedestrian Improvements	Costs can vary significantly depending on scope of project; budget to be developed on a project by project basis
Improvements to designated streets	
Cycling Network Improvements	$100,000
Hunter Street Bike Lanes	
Caroline Street Contra-flow lane	
Ferguson Street Bike Lanes	
Locke Street Bike Contra-flow Lane	
York Boulevard Bike Lanes	
Terminal Development Node at MacNab	$3M+
Complementary Travel Demand Measures	
Employee Trip Reduction Program	
Long Term Parking Rate Increase	
Amend Existing Parking By-Laws	
Investigate and Develop Strategic Parking Areas	



LEGEND:

○ Approval of Downtown Transportation Master Plan

Design and Budget Approvals
Implementation Timeframe

Note: The length of bars shown represents the period during which the action could take place or be initiated. Implementation will not necessarily take the entire period identified.